

What is claimed is:

1. A hydrodynamic bearing system, comprising:  
a shaft having an axial bore formed therein;  
a radial bearing rotatably supporting said shaft;  
at least one annular thrust plate mounted on said shaft;  
a fixing element affixing said thrust plate to said shaft, said fixing element being inserted into said axial bore of said shaft; and  
a counter bearing corresponding to said thrust plate,  
wherein said axial bore is formed in an area where said thrust plate is to be positioned, wherein an outer diameter of said fixing element is greater than an inner diameter of said axial bore, and wherein said fixing element further comprises a prescribed shape.
2. The hydrodynamic bearing system according to claim 1, wherein said fixing element is a cylindrical plug having a rounded peripheral surface.
3. The hydrodynamic bearing system according to claim 1, wherein said fixing element is a truncated cone.
4. The hydrodynamic bearing system according to claim 1, wherein said shaft further comprises a shoulder which reduces a diameter of said shaft,

and wherein said thrust plate is arranged in an area of the reduced diameter of said shaft resting on said shoulder.

5. The hydrodynamic bearing system according to claim 1, wherein said thrust plate is arranged in a sliding fit, a transition fit or a press fit on said shaft.

6. The hydrodynamic bearing system according to claim 1, wherein said thrust plate is set at a right angle to a rotational axis of said shaft.

7. A hydrodynamic bearing system, comprising:

a shaft having an axial bore formed therein;

a radial bearing rotatably supporting said shaft;

at least one annular thrust plate mounted on said shaft;

a fixing element affixing said thrust plate to said shaft, said fixing element being inserted into said axial bore of said shaft; and

a counter bearing corresponding to said thrust plate,

wherein said axial bore is formed in an area where said thrust plate is to be positioned, wherein an outer diameter of said fixing element is greater than an inner diameter of said axial bore, and wherein said fixing element further comprises a chamfer on at least one of its ends.

8. The hydrodynamic bearing system according to claim 7, wherein said shaft further comprises a shoulder which reduces a diameter of said shaft, and wherein said thrust plate is arranged in an area of the reduced diameter of said shaft resting on said shoulder.

9. The hydrodynamic bearing system according to claim 7, wherein said thrust plate is arranged in a sliding fit, a transition fit or a press fit on said shaft.

10. The hydrodynamic bearing system according to claim 7, wherein said thrust plate is set at a right angle to a rotational axis of said shaft.

11. A hydrodynamic bearing system, comprising:  
a shaft having an axial bore formed therein;  
a radial bearing rotatably supporting said shaft;  
at least one annular thrust plate mounted on said shaft;  
a fixing element affixing said thrust plate to said shaft, said fixing element being inserted into said axial bore of said shaft; and  
a counter bearing corresponding to said thrust plate,  
wherein said axial bore is formed in an area where said thrust plate is to be positioned, wherein an outer diameter of said fixing element is greater than an inner diameter of said axial bore, and wherein said thrust plate further

comprises an annular recess on its inner diameter.

12. The hydrodynamic bearing system according to claim 11, wherein said shaft further comprises a shoulder which reduces a diameter of said shaft, and wherein said thrust plate is arranged in an area of the reduced diameter of said shaft resting on said shoulder.

13. The hydrodynamic bearing system according to claim 11, wherein said thrust plate is arranged in a sliding fit, a transition fit or a press fit on said shaft.

14. The hydrodynamic bearing system according to claim 11, wherein said thrust plate is set at a right angle to a rotational axis of said shaft.